


HORIZONTAL MACHINING CENTER		
HC 400		
MACHINE SPEC. SELECTION SHEET		

1. GENERAL SPECIFICATION

ITEM			UNIT	SPECIFICATION	SELECTION	
CAPACITY	PALLET SIZE		mm	400X400	DEFAULT	
	MAX. WORKPIECE SIZE	DIAMETER	mm	600		
		HEIGHT	mm	800		
	MAX. WORKPIECE WEIGHT		kg	400		
	SPINDLE NOSE TO TABLE CENTER		mm	150 ~ 715		
	SPINDLE CENTER TO PALLET TOP		mm	50 ~ 610		
MAIN DIMENSION		LENGTH	mm	4560		
		WIDTH	mm	2250		
		HEIGHT	mm	2830		
MACHINE WEIGHT(Net) ⁽¹⁾			kg	11000		
UTILITY	CONTROL POWER	VOLT/FREQUENCY	V/Hz	200/50		
				220/60		
				380/50,60		
				400/50,60		
				415/50,60		
				440/50,60		
	PHASE	PH	3			
	REQUIRED POWER CAPACITY		kVA	58		
	COMPRESSED AIR	PRESSURE	Mpa	0.54		
		CONSUMPTION	NL/min	330		
MACHINE COLOR				DOOSAN 4 TONE COLOR MT DARK GRAY(5.3PB 3.0 / 0.4) MT MIDDLE GRAY(1.4RP 4.8 / 0.1) MT LIGHT GRAY(7.3B 7.8 / 0.4) MT BLUE(6.1PB 5.9 / 7.6)	STD.	SELECTIVE
				USER DEFINED	OPT.	
CNC CONTROL			MODEL	FANUC 32i-A	STD.	SELECTIVE
			MODEL	FANUC 31i-A	OPT.	

(1) SPECIFIED WEIGHT IS BASED ON THE MACHINE WITH STANDARD SPECIFICATION AND INCLUDING STANDARD ACCESSORIES AND EQUIPMENTS

2. SPINDLE HEAD

ITEM			UNIT	SPECIFICATION	SELECTION	
MOTOR	TYPE			αP22/8000i	STD.	SELECTIVE
	POWER(CONT./SHORT)	kW		11/18.5(15min)		
	MAX. SPINDLE SPEED	r/min		8000		
	BASIC SPEED	r/min		750		
	MAX. TORQUE(SHORT TERM)	N·m		286.2(15min)		
	ORIENTATION			MZ - SENSOR		
	POWER TRANSMISSION			BELT DRIVEN	OPT.	
	TYPE			αT22/10000i		
	POWER(CONT./SHORT)	kW		22/26(30min)		
	MAX. SPINDLE SPEED	r/min		10000		
	BASIC SPEED	r/min		1500		
	MAX. TORQUE(SHORT TERM)	N·m		165.6(30min)		
	ORIENTATION			MZ - SENSOR		
	POWER TRANSMISSION			DIRECT CONNECTION		
SPINDLE TOOL CLAMPING FORCE			kN	9.8(15.7) ⁽¹⁾		
TAPER TYPE				ISO #40, 7/24 TAPER		
SPINDLE COOLING	TANK CAPACITY	L	18.0			
	CAPACITY	Kcal/h	1048.0			

(1) IN CASE OF HSK SPINDLE, TOOL CLAMPING FORCE IS 15.7kN

3. TABLE

ITEM		UNIT	SPECIFICATION	SELECTION	
1"INDEX	POSITIONING ACCURACY	deg.	±3"	STD.	SELECTIVE
	REPEATABILITY ACCURACY	deg.	±1"		
	MAX. ROTATING SPEED	r/min	25		
	CLAMPING FORCE	kN	63		

4. AXES SYSTEM

ITEM			UNIT	SPECIFICATION	SELECTION	
STROKE	X AXIS		mm	600	DEFAULT	
		Y AXIS	mm	560		
		Z AXIS	mm	565		
RAPID TRAVERSE	X AXIS		m/min	40		
		Y AXIS	m/min	40		
		Z AXIS	m/min	40		
ACCELERATION / DECELERATION TIME	X AXIS		msec	220		
		Y AXIS	msec	220		
		Z AXIS	msec	220		
MAX. CUTTING FEEDRATE	X AXIS		mm/min	20,000		
RATED THRUST FORCE AT STALL	Z AXIS		kN	8.6		
BALL SCREW(DIAMETER x LEAD)	X AXIS		mm	40X16		
		Y AXIS	mm	40X16		
		Z AXIS	mm	40X16		
ACCURACY	POSITIONING		mm	±0.005/FULL STROKE		
	REPEATABILITY		mm	±0.002		
DRIVE MOTOR TYPE	X AXIS			α22/3000i		
	Y AXIS			α22B/3000i		
	Z AXIS			α22/3000i		
		INDEX		α8/3000i		
	B AXIS	ROTARY		α12/3000i		
DRIVE MOTOR POWER	X AXIS		kW	4.0		
	Y AXIS		kW	4.0		
	Z AXIS		kW	4.0		
		INDEX	kW	1.6		
	B AXIS	ROTARY	kW	3.0		
FEEDBACK SYSTEM	INCREMENTAL PULSE CODER			X,Y,Z	STD.	SELECTIVE
	ABSOLUTE PULSE CODER			B		
	LINEAR SCALE			X,Y,Z	OPT.	
		X AXIS			OPT.	
		Y AXIS			OPT.	
		Z AXIS			OPT.	

5. ATC

ITEM		UNIT	SPECIFICATION		SELECTION	
TOOL SHANK	PULL STUD		MAS403 BT 40	PS806(NIKKEN)	STD.	SELECTIVE
			CAT 40	MODIFIED DIN	OPT.	
			DIN 69871-A40	DIN 69872 #40	OPT.	
			ISO 12164-1HSK-A63	-	OPT.	
TOOL STORAGE CAPACITY		ea	40		STD.	SELECTIVE
		ea	60		OPT.	
		ea	120 (60+60 MAG.)		OPT.	
		ea	170 (MATRIX)		OPT.	
		ea	262 (MATRIX)		OPT.	
TOOL SELECT TYPE			FIXED ADDRESS		DEFAULT	
MAX. TOOL DIAMETER		mm	φ75(CONT.), φ140(ADJACENT POTS EMPTY)			
MAX. TOOL LENGTH		mm	300			
MAX. TOOL WEIGHT		kg	10			
MAX. TOOL MOMENT		N·m	11.8			
T-T-T TIME		s	LESS THAN 7.5kg : 1.5 , MORE THAN 7.5kg : 2.0			
C-T-C TIME		s	LESS THAN 7.5kg : 4.0 , MORE THAN 7.5kgf : 4.5			

6. APC & PALLET MAGAZINE

ITEM		UNIT	SPECIFICATION	SELECTION	
PALLET SURFACE	TAP PALLET		24-M16xP2.0	STD.	SELECTIVE
	T-SLOT PALLET		4-18H8	OPT.	
MAX. WORKPIECE WEIGHT		kg	400	DEFAULT	
PALLET CHANGE TYPE			ROTARY SHUTTLES		
PALLET ROTATION IN SETUP STATION			MANUALLY 90°		
TWIN PALLET	NUMBER OF PALLET	ea	2	STD.	SELECTIVE
	MIN. PALLET CHANGE TIME	s	8		
	MAX. WORKPIECE SIZE	mm	φ600 x 800h		
MULTI PALLET STATION ⁽¹⁾	NUMBER OF PALLET	ea	7	OPT.	
		ea	g ^(NOTE.3)		
	MAX. WORKPIECE SIZE	mm	φ600 x 800h		
	MAGAZINE TYPE		BUFFER STATION TYPE with CARRIER		
	OPERATION		SCHEDULED OPERATION		
	PALLET DRIVE DEVICE		SERVO MOTOR & REDUCTION GEAR		
	PALLET SELECT TYPE		RANDOM		
	HYDRAULIC POWER UNIT	kW	2.2		

(1) IT IS POSSIBLE UNDER NC "FANUC 32i-A" BUT CAN'T BE USED WITH MATRIX MAGAZINE SIMULTANEOUSLY.

IF NC "FANUC 31i-A" IS USED, MPS(MULTI PALLET STATION) AND MATRIX MAGAZINE CAN BE USED SIMULTANEOUSLY.

7. LUBRICATION & HYDRAULIC SYSTEM

ITEM		UNIT	SPECIFICATION	SELECTION
LUBRICATION	TANK CAPACITY	L	1.4	DEFAULT
	PUMP MOTOR POWER	kW	0.057	
	DISCHARGE PRESSURE	MPa	1.66	
HYDRAULIC SYSTEM	TANK CAPACITY	L	43	DEFAULT
	MOTOR CAPACITY	kW	2.2	
	OPERATING PRESSURE	MPa	5.39	

Specifications are subject to change without prior notice.

8. COOLANT SYSTEM

ITEM		UNIT	SPECIFICATION	SELECTION	
FLOOD COOLANT	TANK CAPACITY	L	550	DEFAULT	
	PUMP MOTOR POWER	kW	1.5		
	FILTRATION	mesh	10(TANK SCREEN FILTER)		
	MAX. PRESSURE	MPa	0.68(60Hz)/0.49(50Hz)		
	MAX. FLOWRATE	L/min	30		
COOLANT SYSTEM	PUMP MOTOR POWER	kW	1.5	OPT.	SELECTIVE
1.91 MPa TSC	FILTRATION	μm	20~30(CYCLONE TYPE)		
	MAX. PRESSURE UNDER BLOCKING	MPa	1.91		
	MAX. FLOWRATE WITHOUT TOOL	L/min	20(60Hz)/16.6(50Hz)		
COOLANT SYSTEM	PUMP MOTOR POWER	kW	3.0	OPT.	
2.94 MPa TSC	FILTRATION	μm	20~30(CYCLONE TYPE)		
	MAX. PRESSURE UNDER BLOCKING	MPa	2.94		
	MAX. FLOWRATE WITHOUT TOOL	L/min	20(60Hz)/16.6(50Hz)		
COOLANT SYSTEM	PUMP MOTOR POWER	kW	7.5	OPT.	
6.86 MPa TSC	FILTRATION	μm	20~30(CYCLONE TYPE)		
	MAX. PRESSURE UNDER BLOCKING	MPa	6.86		
	MAX. FLOWRATE WITHOUT TOOL	L/min	30(60Hz)/25(50Hz)		
SHOWER COOLANT	PUMP MOTOR POWER	kW	0.9	OPT.	SELECTIVE
	FILTRATION	mesh	10(TANK SCREEN FILTER)		
	MAX. PRESSURE	MPa	0.098(60Hz)/0.063(50Hz)		
	MAX. FLOWRATE	L/min	200		
COOLANT GUN ⁽²⁾	PUMP MOTOR POWER	kW	0.4	OPT.	SELECTIVE
	FILTRATION	mesh	10(TANK SCREEN FILTER)		
	MAX. PRESSURE	MPa	0.15(60Hz)/0.11(50Hz)		
	MAX. FLOWRATE	L/min	40		
OIL SKIMMER	TYPE		BELT	OPT.	SELECTIVE

(1) THERE ARE COOLANT PIPING INSIDE OF THE MACHINE & ROTATING UNION ON THE SPINDLE HEAD FOR TSC READY.

(2) THIS DEVICE IS OPEARATED BY APC SET-UP DOOR

9. CHIP CONVEYOR & BUCKET

ITEM		UNIT	SPECIFICATION	SELECTION	
CONVEYOR	HINGED PLATE TYPE CONVEYOR	SET		OPT.	SELECTIVE
	SCRAPER TYPE CONVEYOR	SET		OPT.	
	2-STEP DRUM CHIP CONVEYOR	SET		OPT.	
BUCKET	TYPE		DOOSAN STANDARD TYPE	OPT.	SELECTIVE
	CAPACITY	L	300		

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10. COOLING FOR ELECTRIC CABINET

ITEM	UNIT	SPECIFICATION	SELECTION	
FAN COOLER			STD.	SELECTIVE
AIR CONDITIONER			OPT.	

11. ACCESSORIES

ITEM		UNIT	SPECIFICATION	SELECTION	
WORK LIGHT		SET	HALOGEN LAMP & FLUORESCENT LAMP	DEFAULT	
OPERATOR CALL LAMP		SET	3-COLOR SIGNAL TOWER		
INSTALLATION PARTS		SET	1		
SPARE PARTS(FUSES & ETC.)		SET	1		
ASSEMBLY & OPERATION TOOLS		SET	1		
AUTO TOOL LENGTH MEASUREMEMT	MAKER/SPEC.	SET	RENISHAW/TS27R ⁽¹⁾	OPT.	SELECTIVE
AUTO TOOL BREAKAGE DETECTION	MAKER/SPEC.	SET	OMRON/D5A ⁽¹⁾	OPT.	
	MAKER/SPEC.	SET	FAR-EAST MACHINE TOOL/FEM-1CP(NEELDE TYPE IN CUTTING AREA)	OPT.	
AUTO WORKPIECE MEASUREMENT	MAKER/SPEC.	SET	RENISHAW/OMP60	OPT.	SELECTIVE
5TH AXIS PREPARATION		SET	USER DEFINED	OPT.	SELECTIVE
AIR GUN		SET	-	OPT.	SELECTIVE

(1) THIS DEVICE IS UP & DOWN MOVING TYPE.

< NOTE >

1. SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT PRIOR NOTICE.
2. ALL SPECIFIED VALUES ARE GIVEN AT STANDARD ELECTRIC POWER CONDITIONS.(60Hz, 220V)
3. PLEASE INQUIRE DOOSAN INFRACORE R&D DEPARTMENT WHEN END-USER SELECT * MARKS NECESSARILY
4. MACHINE LAY-OUT AND WEIGHT ARE CHANGED ACCORDING TO OPTIONAL SPECIFICATION.
5. PLEASE REFER TO LAY-OUT AND FOUNDATION DRAWING IN RELATION TO INSTALLATION/ELECTRIC DEVICE.
6. ALL SPECIFIED VALUES OF PRESSURE AND FLOW RATE OF COOLANT AND HYDRAULIC PUMP ARE GIVEN AT PUMP OUTLET.
7. THE FLOWRATE AND THE PRESSURE OF COOLANT ARE GIVEN AT THE CONDITION OF USING WATER SOLUBLE COOLANT.
8. SINCE PRESSURE AND FLOWRATE OF T-S-C HAVE INFLUENCE ON TOOL LIFE AND CUTTING CAPABILITY, TYPE OF T-S-C SHOULD BE SELECTED WITH PRUDENCE.
FOR DETAIL SPECIFICATION ABOUT T-S-C, REFER TO CHAPTER II -12-B OF MACHINING CENTER SALES GUIDES.
9. REFER TO THE SEPARATED SPEC. SHEETS IN RELATION TO SPECIFICATION, FUNCTION AND OPTION OF CNC CONTROLLER.